

PATENT SPECIFICATION

273,471



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Complete Left : April 8, 1927.

Complete Accepted : July 7, 1927.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Rotary Printing Machines.

I, ARTHUR RICHARDSON TIMSON, a British subject, of Perfecta Works, Catesby Street, Kettering, do hereby declare the nature of this invention 5 to be as follows:—

This invention relates to rotary printing machines and has for its object an improvement therein whereby the operation of making ready or setting up may 10 be more easily performed.

In rotary printing machines as heretofore constructed access to the type and impression cylinders for making ready has been somewhat difficult.

15 According to the present invention these cylinders are mounted and arranged in such a manner that they can be withdrawn from the machine or from working position in the machine so as to be 20 readily accessible for making ready.

Conveniently the said cylinders are 25 slidable along extended shafts in conjunction with which there is provided a displaceable bearer plate which holds the cylinders in working position.

In a practical embodiment of the invention the type and impression cylinders are mounted rotatably each upon a shaft which at one end is fixed 30 in one of the side frames of the printing machine. These shafts project beyond the other side frame and are of such length that by moving the cylinders slidably thereon they may be withdrawn 35 from working position to a position outside the machine so as to be accessible for the purpose previously mentioned. Slidable along the said shafts is a bearer plate which when the cylinders occupy 40 the working position is fastened to a side plate frame or some fixed part of the machine to prevent endwise movement, of the cylinders along the shaft.

The outer or extended end of one or 45 each shaft may be carried by a bracket which projects from one side of the printing machine. To enable the cylinders to be relatively adjusted for the

impression one or each shaft may be mounted in an eccentric or other adjustable bearing in the side frame, bearer plate and bracket.

According to a constructional form of the invention the shaft of one cylinder e.g. the impression cylinder is adjustably mounted at one end in the machine side frame and at the other end in a bracket projecting from the opposite side of the machine. The shaft for the type cylinder is fixed in the side frame and is arranged parallel to the other shaft. On that portion of the shafts which extends beyond the cylinder thereon is a bearer plate detachably secured by screws or equivalent to that part of the machine frame from which the bracket projects. The plate constitutes a support for the outer end of the type cylinder shaft. By unfastening the screws the bearer plate can be moved outwards along the extended shafts and the cylinders can then be withdrawn. After the make ready operation the cylinders are pushed back along their shafts into working position by the bearer plate which, when fastened to the frame, holds the cylinders in position and maintains proper distance between the shafts at the outer end of the cylinders.

The shafts may be fastened by nuts and the cylinders may be driven by suitable gears. The cylinders may be geared together and can be withdrawn from and returned to the working position without disturbing their gear connection.

The details of construction may be varied without departing from the scope of the invention.

Dated this 10th day of June, 1926.

ARTHUR RICHARDSON TIMSON, 90

Applicant,

E. N. Lewis & Taylor,
Chartered Patent Agents,
Berridge Street Chambers, Leicester,
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COMPLETE SPECIFICATION.

Improvements in or relating to Rotary Printing Machines.

I, ARTHUR RICHARDSON TIMSON, a British subject, of Perfecta Works, Catesby Street, Kettering, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to rotary printing machines and is concerned more particularly with the arrangement of the type and impression cylinders therein.

I am aware of several proposed arrangements of printing cylinders each designed to permit of the entire removal from a printing machine of one or more cylinders in order to facilitate the operation of making ready or setting up or to enable another cylinder or other cylinders to be substituted therefor.

The object of the present invention is an improvement whereby the type or impression cylinder or both, in a rotary printing machine can be rendered readily accessible for making ready without involving the removal thereof from the machine.

Accordingly the invention consists in an improved arrangement of said type and impression cylinders according to which one of them, e.g. the type cylinder, or both of them, is or are mounted in such a manner as to be displaceable axially from the working position to another position in which it or they continue to be supported in or on the machine, and is or are readily accessible for making ready.

According to the preferred embodiment of the invention the type cylinder is mounted in a carriage displaceable in the machine frame so as to permit of the withdrawal of the cylinder axially from the working position. Conveniently, the carriage comprises supports adapted to carry the type cylinder axle at its opposite ends and mounted on extended bars or rods slidable axially in the machine frame.

In another embodiment of the invention both cylinders are slidable along extended axles in conjunction with which there is provided a displaceable bearer plate which holds the cylinders in working position.

To enable the invention to be more clearly and readily understood reference

will be made in the following further description to the accompanying drawings, wherein,

Figure 1 is a longitudinal sectional elevation of one practical example of the invention with the cylinders in the working position, the section being taken on line I—I of Figure 3.

Figure 2 is a view similar to Figure 1 but showing the type cylinder withdrawn for making ready.

Figure 3 is an end elevation of the arrangement as viewed from the left of Figure 1.

Figure 4 is a plan of the type cylinder and its carriage in the working position.

Figure 5 is an elevation of an arrangement wherein both cylinders are withdrawable with the cylinders in the working position, and

Figure 6 is a view similar to Figure 5 but with the cylinders withdrawn for making ready.

Referring first to Figures 1 to 4, the type cylinder 1 is mounted rotatably on an axle 2 removably fixed at opposite ends by clamps 3 in supports 4. These supports are carried by two bars or rods 5 parallel with each other and with the type cylinder, said rods or bars being slidable axially through the main side members or standards 6 of the machine frame. One of the supports 4 is located on the outside of the machine frame and the other on the inside.

The outer support is removably fixed on the rods or bars and the latter are of such length as to permit of the type cylinder being practically wholly withdrawn from the one side of the machine. When the type cylinder is in the working position, as shown in Figure 1, the bars or rods 5 project correspondingly on the opposite side of the machine. At their projecting ends the bars are connected by a tie member 7. The outer support is fitted with a handle 8 for use by the operator. It will be obvious that by pulling on the handle the parallel rods or bars can be drawn through the main frames of the machine to carry the type cylinder 1 from the working position shown in Figure 1 to the make ready position represented in Figure 2. Since the supports 4 are connected by the type cylinder axle the inner support

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conveniently serves as a stop to limit the withdrawing movement by contact with the opposing side member of the machine frame. Upon completion of the make ready operation the type cylinder is merely pushed back into working position again. It will, of course, be understood that the machine frame is suitably constructed to permit of the aforesaid movement. If desired, suitable provision may be made for locking movable carriage in the working position. For example, a screw or screws may be passed through the outer support into the adjacent main frame side member or alternatively any other convenient fastening means may be employed.

The impression cylinder 9 is mounted rotatably on an axle 10 removably fixed in the longitudinal members 11 of the machine frame, the said cylinder being fitted with a gear 12 driven in the usual manner, and the motion being transmitted to the type cylinder through the medium of gears 13 and 14. The gear 13 is of such a diameter as to clear the type cylinder so as to avoid damage thereto and to any media carried thereby when said cylinder is withdrawn and replaced as aforesaid.

In a further practical embodiment of the invention the type and impression cylinders are mounted rotatably each upon an axle which at one end is fixed in one of the side frames of the machine. These axles project beyond the other side frame and are of such length that by moving the cylinders slidably thereon the latter can be withdrawn from working position to a position outside the machine so as to be accessible for the purpose previously mentioned. Slidable along the said axles is a bearer plate which when the cylinders occupy the working position is fastened to the opposing side frame or some fixed part of the machine to prevent endwise movement of the cylinders along the axles.

The outer or extended end of one or each axle may be carried by a bracket which projects from one side of the printing machine. To enable the cylinders to be relatively adjusted for the impression one or each axle may be mounted in an eccentric or other adjustable bearing in the side frame.

According to a constructional example of this form of the invention, see Figures 5 and 6, the axle 10a of one cylinder e.g. the impression cylinder 9a, is mounted at one end in one of the side frames 6a of the machine and at the other end in a bracket 15 attached to and projecting outwards from the opposite side frame. The axle 2a for the

type cylinder 1a is fixed in the same side frame as the axle 9a and is arranged parallel to this axle. On the extensions of the axles is a bearer plate 16 detachably secured by screws (not shown) or equivalent to that part of the machine frame from which the bracket 15 projects. The plate constitutes a support for the outer end of the type cylinder axle. By unfastening the screws the bearer plate can be moved from the position shown in Figure 5 outwards along the extended axles and the cylinders can then be withdrawn, as represented in Figure 6. Such movement is limited by the bracket. After the make ready operation the cylinders are pushed back along their axles into working position by the bearer plate which, when fastened to the frame, holds the cylinders in position and maintains proper distance between the axles at the outer end of the cylinders.

The axles 2a and 10a are removably fixed in position and the cylinders may be driven by gearing including gears 13a and 14a thereon in the usual manner. The cylinders, being geared together, can be withdrawn from and returned to the working position without disturbing their gear connection.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a rotary printing machine, an improved arrangement of the type and impression cylinders according to which one of them, e.g. the type cylinder, or both of them is or are mounted in such a manner as to be displaceable axially from the working position to another position in which it or they continue to be supported in or on the machine and is or are readily accessible for making ready.

2. In a rotary printing machine, an arrangement according to Claim 1, wherein the type cylinder is mounted in a carriage displaceable in the machine frame so as to permit of the withdrawal of the type cylinder axially from the working position.

3. An arrangement according to Claim 2, wherein the movable carriage comprises supports adapted to carry the type roller at its opposite ends and mounted on extended bars or rods slidable axially in the machine frame.

4. A constructional form of the subject matter of Claim 2, wherein the type cylinder is mounted rotatably on an axle removably fixed at opposite ends in sup-

parts mounted one on the outside of the machine frame and the other on the inside on two rods or bars parallel with each other and with the type cylinder,
5 the outer support being fixed on the bars or rods and provided with a handle for use by the operator, and the inner support serving as a stop to limit the withdrawing movement of the type cylinder
10 by contact with the opposing machine frame member, substantially as and for the purpose described.

5. In a rotary printing machine, an arrangement according to Claim 1, wherein both cylinders are slidable along extended axles in conjunction with which there is provided a displaceable bearer plate which holds the cylinders in the working position.

15 6. An arrangement as claimed in Claim 4, wherein the type and impression cylinders are rotatably mounted each upon an axle which at one end is fixed in one of the side frames of the

machine, the other end of one or each axle being located in a bracket attached to and projecting outwards from the opposite side frame, and a bearer plate is slidable on said axles and, when the cylinders occupy the working position, fastened to the opposing side frame of the machine, substantially as and for the purpose herein described.

30 7. In a rotary printing machine, the arrangement of the type and impression rollers, substantially in the manner as and for the purpose herein described with reference to Figures 1 to 4 and Figures 35 5 and 6 of the accompanying drawings.

Dated this 2nd day of April, 1927. 40

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Redhill: Printed for His Majesty's Stationery Office, by Love & Malcolmson, Ltd.—1927.

273.471. COMPLETE SPECIFICATION

[This Drawing is a reproduction of the Original on a reduced scale.]

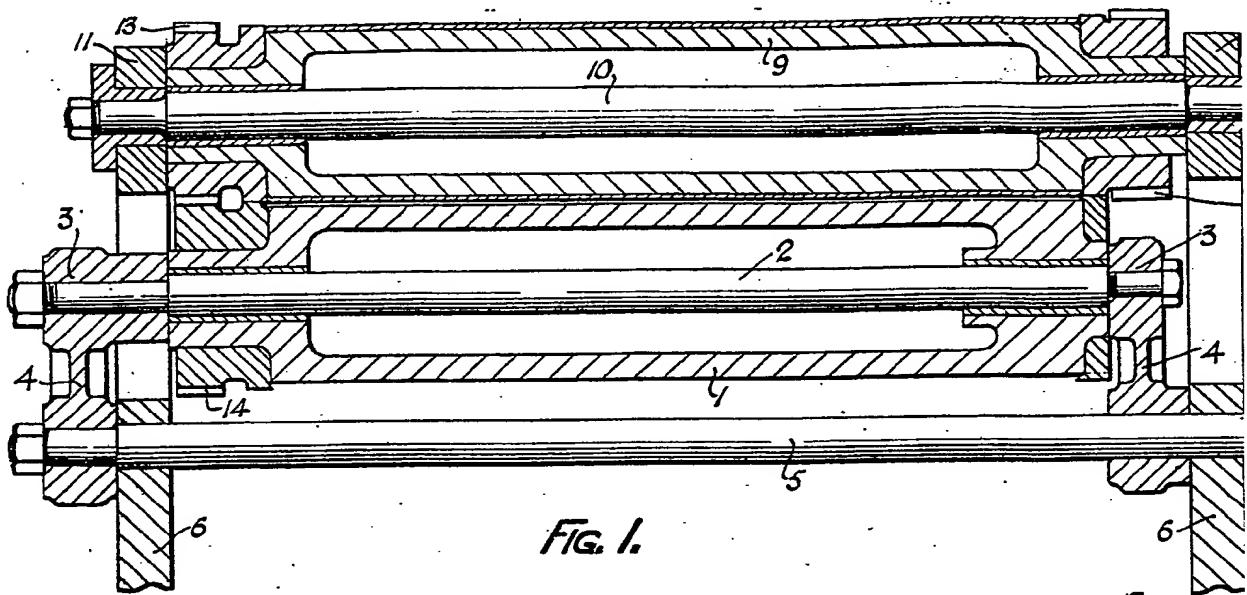


FIG. 1.

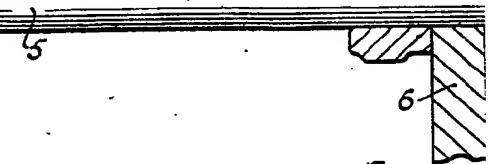


FIG. 2.

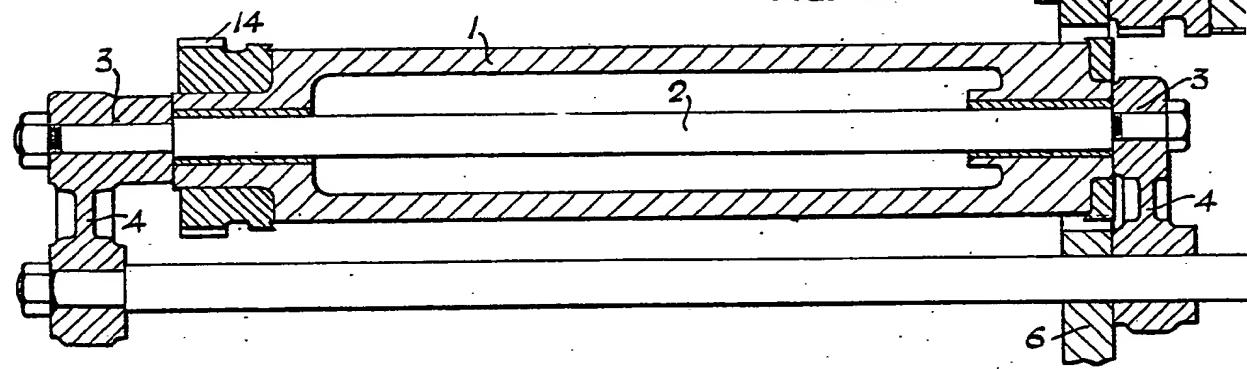
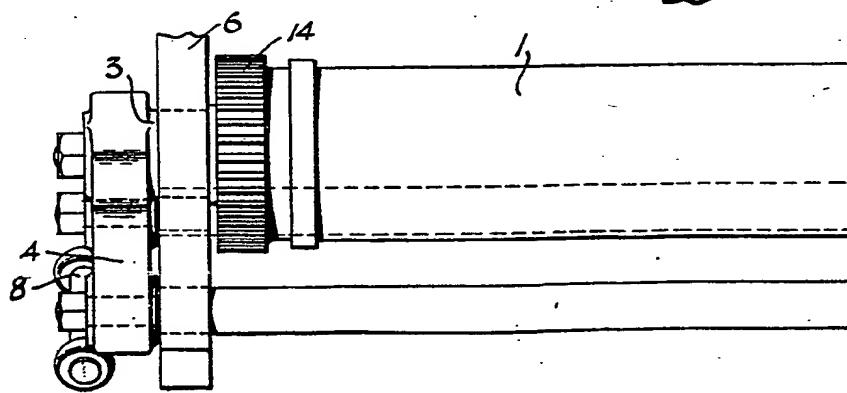
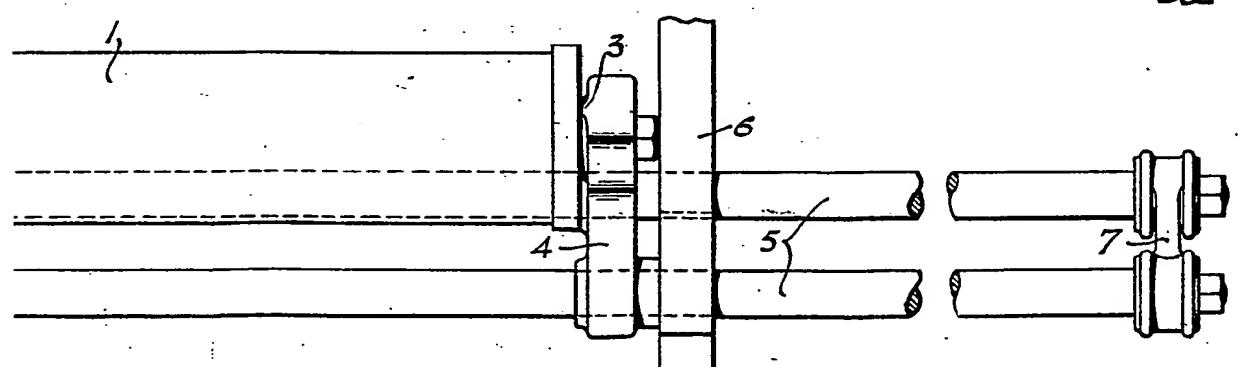
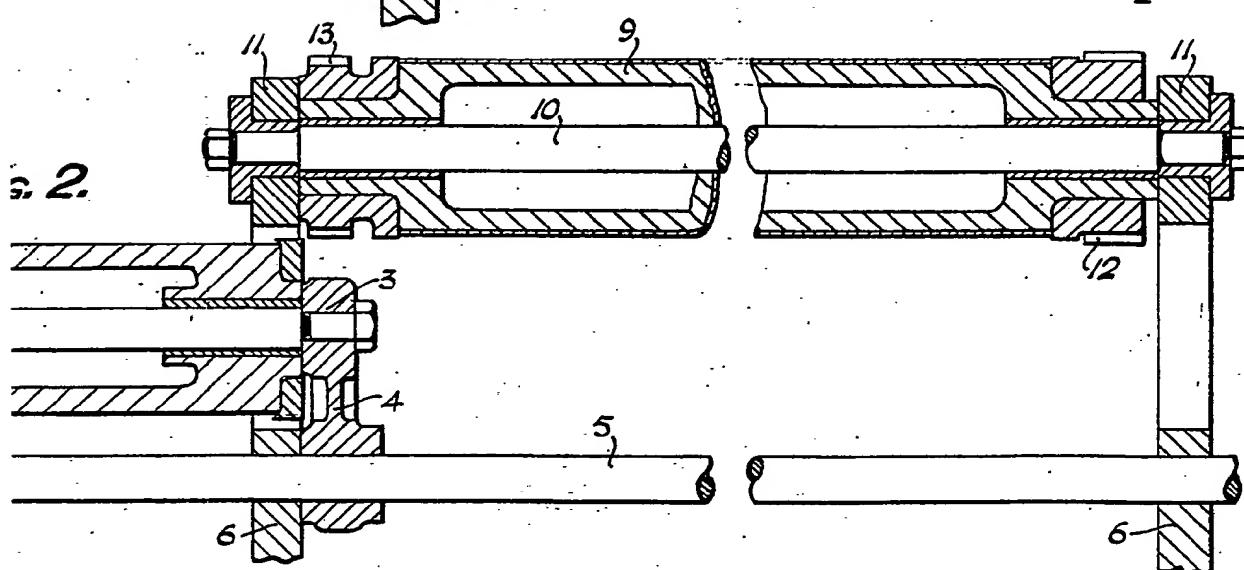
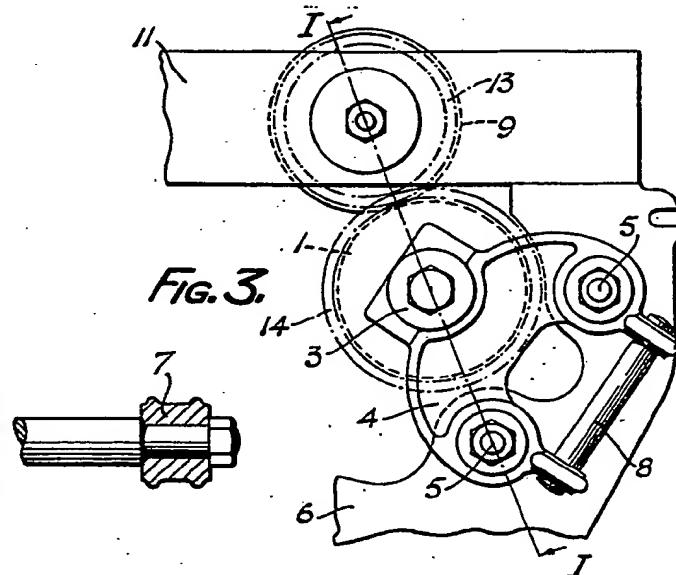
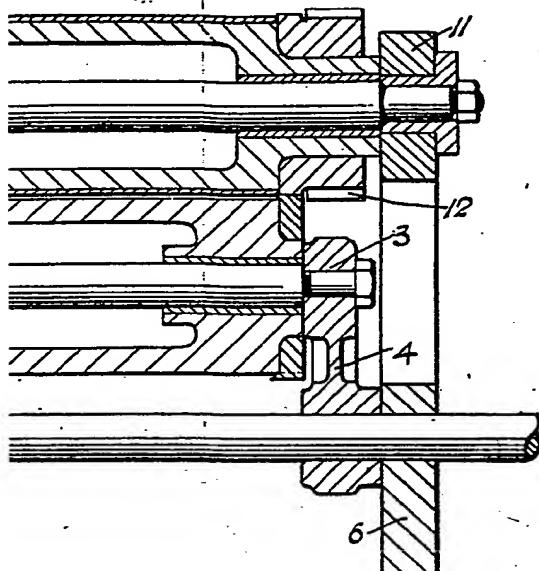


FIG. 3.





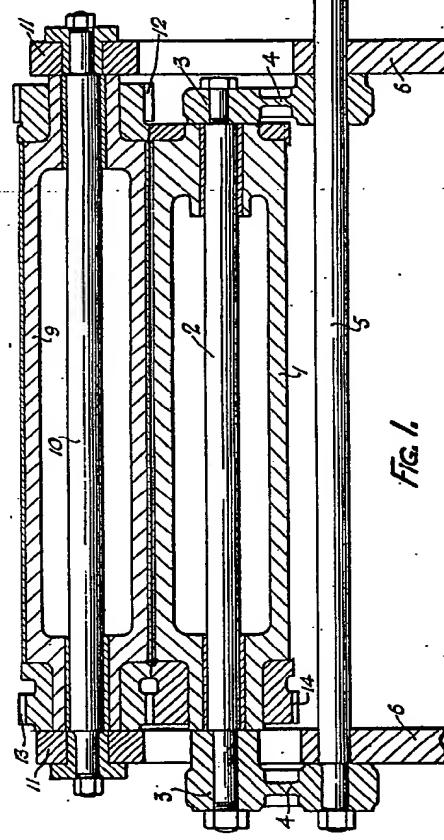


FIG. 1.

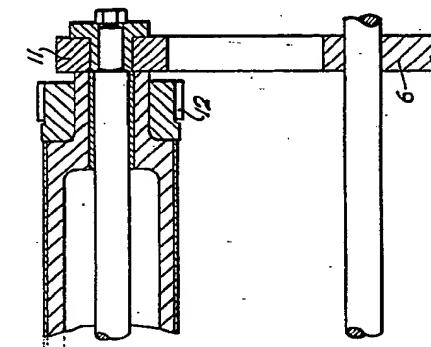
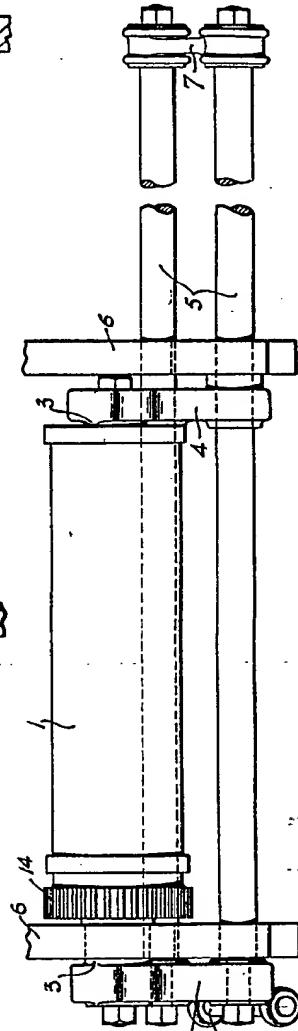
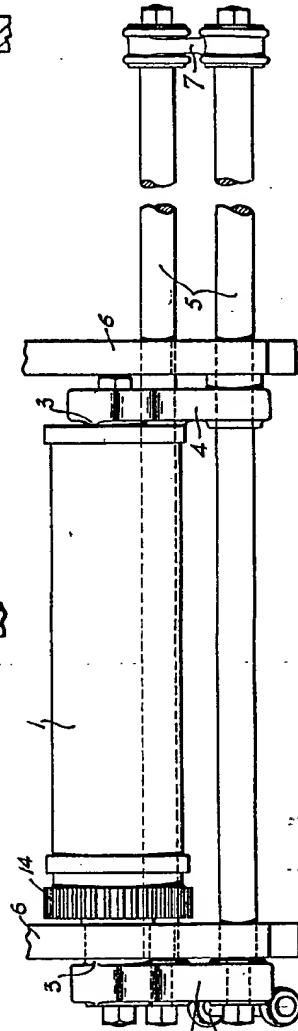


FIG. 2.



[This Drawing is a reproduction of the Original on a reduced scale]

FIG. 4.



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[This Drawing is a reproduction of the Original on a reduced scale.]

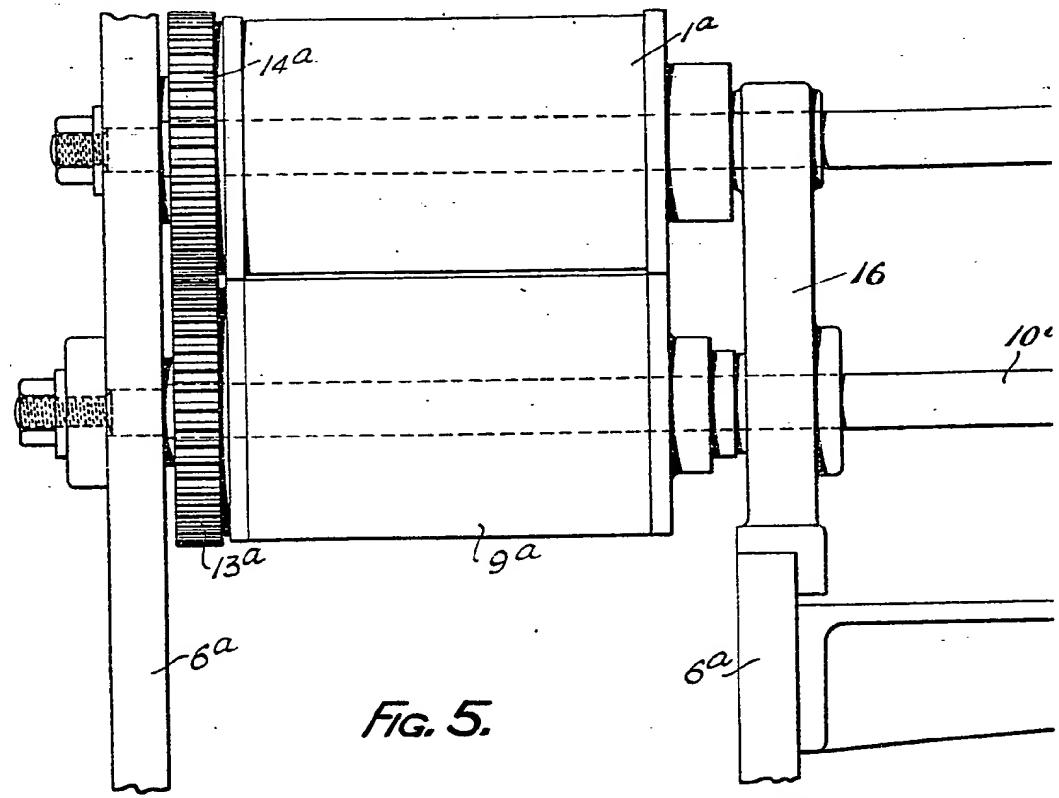


FIG. 5.

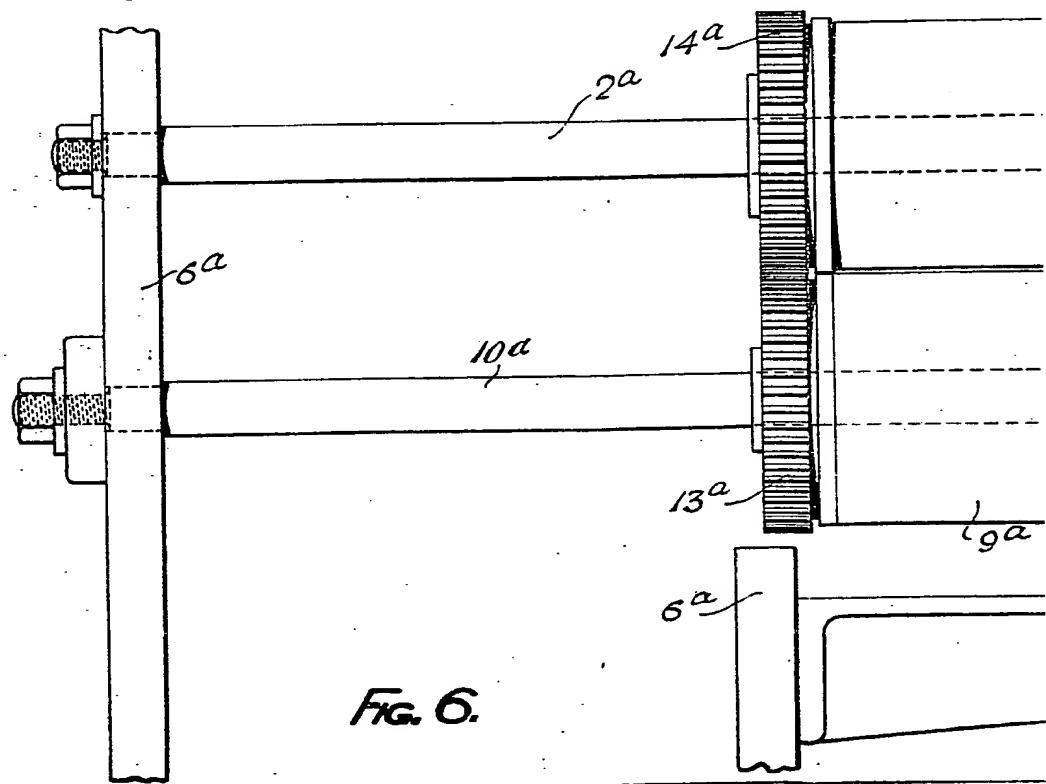
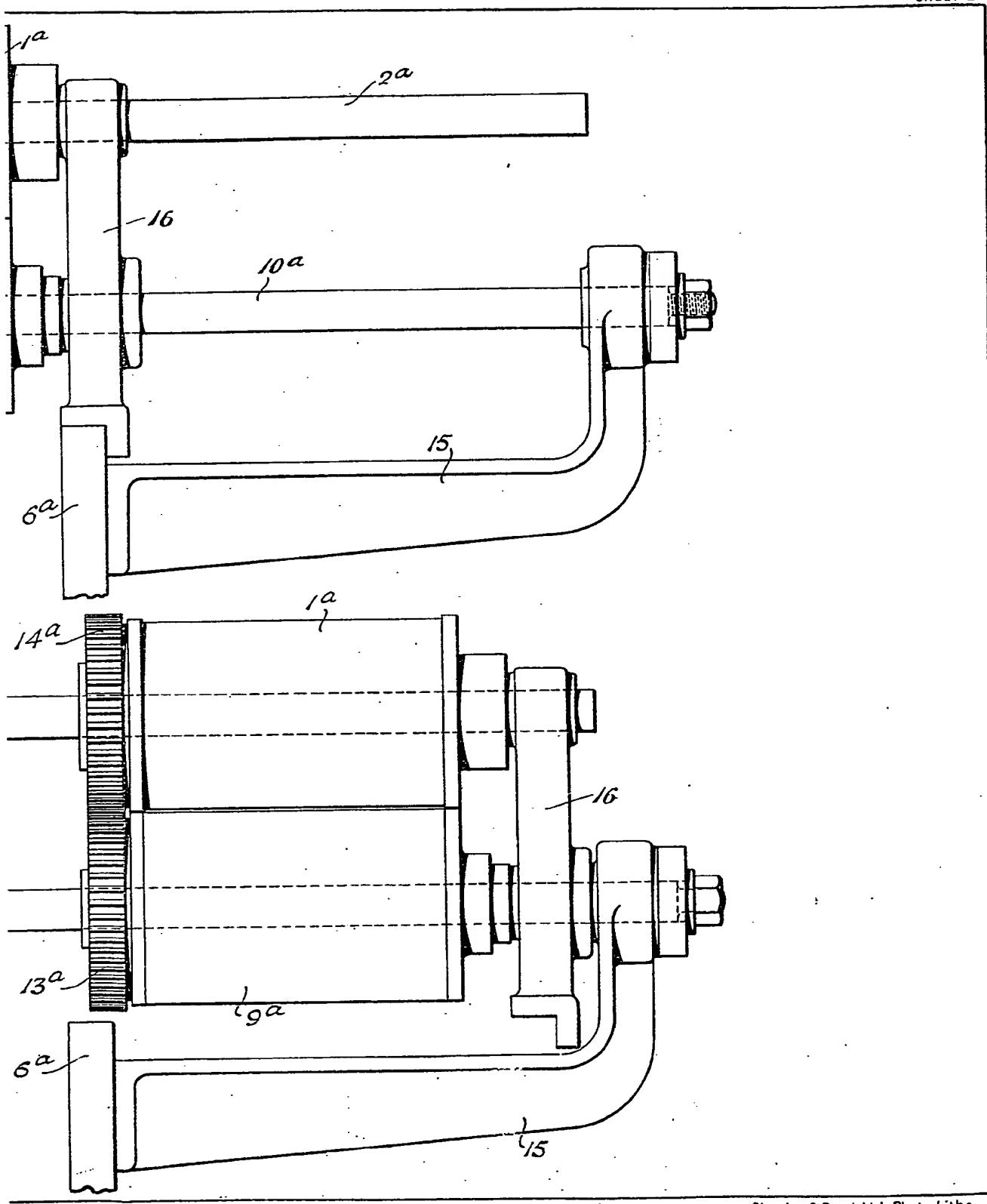


FIG. 6.



Charles & Read Ltd. Photo Litho

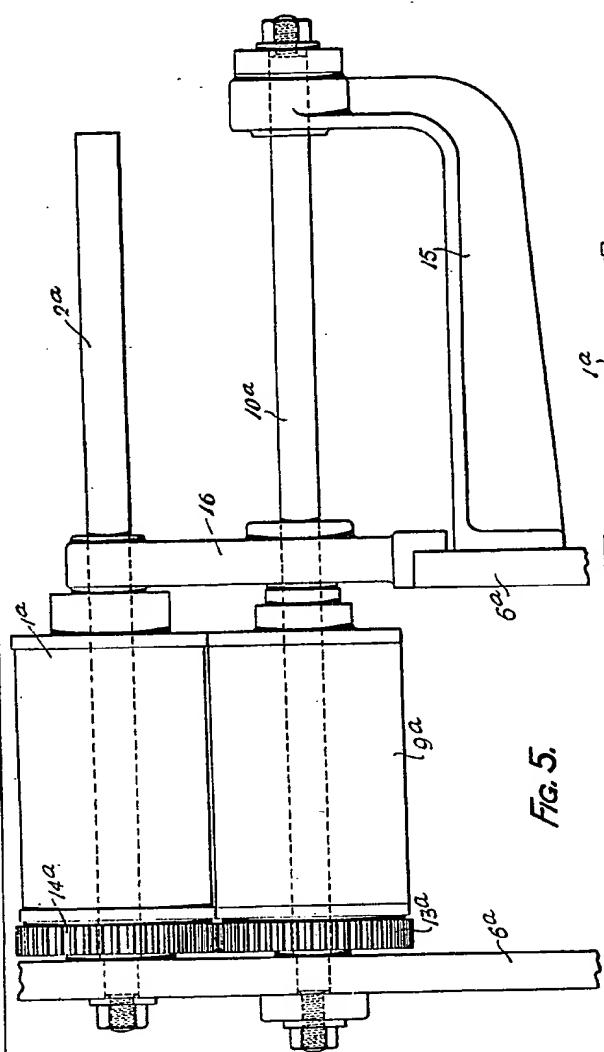


Fig. 5.

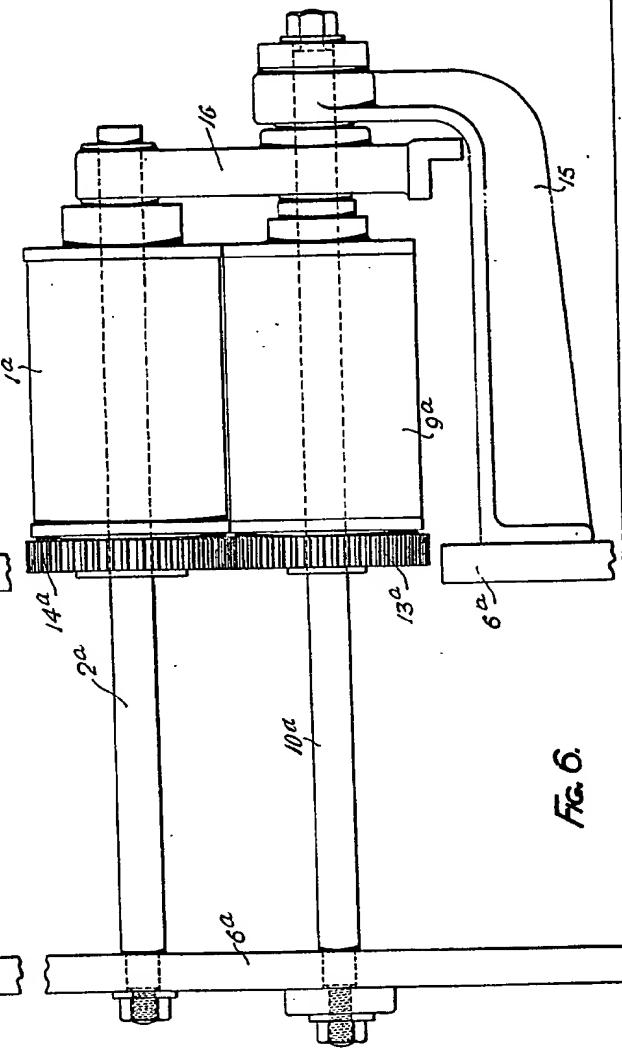


Fig. 6.

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